

Submission to the Regional Mobile Infrastructure Inquiry

Classification: Public

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Mr. Bruce Hore

Mr O'Leary

Thank you for the opportunity to make a submission to the Regional Mobile Infrastructure Inquiry (RMII). I hope to demonstrate how regional mobile infrastructure policy has effectively caused market failure in the mobile telecommunications market for rural and regional Australians and this is an important opportunity for me to provide a 'consumer' and business perspective.

Holding the position of Secretary of the Bright and District Chamber of Commerce, I have a special interest in telecommunications and how that affects the businesses and communities of regional areas within Australia. I have over 30 years in the Information Technology and Communications industry (ICT) which culminated in my leading Hewlett Packard Enterprises South Australia delivery organisation with over 250 personnel delivering services to some of Australia's largest critical infrastructure organisations, corporates and high-level sensitivity government departments. I am an expert cyber security professional, ICT risk management specialist and ICT auditor, specialising in ICT business continuity and disaster recovery. I still deliver infrastructure projects for regional businesses and help with my community in embracing technology to improve their business operations and profitability. I have recently set the scope and reviewed the Alpine Shire Council's Mobile Telecommunications Survey which intended to baseline the region's connectivity, capacity and resilience (Status: Draft). Much more of this work is required in rural and regional areas because there are no real metrics to measure changes in the market and hold carriers to account.

A little about Bright

The Alpine Districts around Bright are telecommunications problematic as well, but I will primarily focus on Bright as a case study. Bright is located within the Alpine Valleys in NE Victoria, between Wangaratta heading towards Mount Hotham. Mountains and valleys are notoriously difficult to supply mobile communications into, worse if you are not required to meet minimum connectivity requirements – such as is the case now (more later). Bright has a census night population of 2,640 people but swells during most weekends to 5,000 and in peak times can support an estimated 25,000 people. Bright is serviced by two Telstra towers, primarily one on Apex Hill, which has a single sector transmitter providing 3G and 4G services across Bright's CBD and surrounding housing. At 5,000 people the tower struggles to service those devices people have, at 20,000, the tower effectively stops and I have been advised by Telstra, first hand, that they will not upgrade the towers willingly and we should pursue money for new towers from government.

Optus and TPG also support the town but the majority of the community stay with Telstra due to perceptions of wider coverage through excellent marketing that is not tested for accuracy (more later), and even if the community were to migrate to other providers, the congestion issues with Telstra will be quickly reflected on these carriers as well.

The bushfires and subsequent evacuation in 2019 and the Victorian COVID lockdowns, left many businesses in Bright (and districts) severely financially weakened. The Bushfires occurred in January, Bright's busiest month, when many businesses build the financial sustainability required to pass the quiet times and keep all employees on board – therefore the bushfire evacuation left most businesses with little financial protection moving into the rest of the year and were not able to keep employees onboard. This would be a particularly bad time for a global pandemic, but sure COVID, why not? Even with Government assistance, many employees left Bright to escape the Victorian lockdowns or to simply move home but the tourists have returned.

In this submission, I would like to focus on Telstra as this is my personal experience as well as the culmination of the experiences of Chamber members. However, the issues identified are entirely applicable to the other carriers within Australia.

With respect, after reviewing the brief, I fear the inquiry is missing some key questions that need to be asked of the strategic management of an essential service for rural and regional Australians and as a national security issue during natural disasters.

Minimum Levels of Service (Coverage vs Expected Level of Performance)

Bright's challenge, like so many regional and rural areas, is that regulators appear to apply a binary measure to coverage. Bright, has good speed and coverage of the CBD and surrounding housing during weekdays, and Telstra advise that the capacity is based on the census population. However, Telstra mobile struggles to perform on even quiet weekends, let alone the busy months of high tourism periods. Yet Telstra stipulates that the performance of the mobile network is fit for purpose in the several discussions I have had with them.

Poor performance of the networks leaves businesses experiencing financial and reputational threats that would never be tolerated in the cities. Some case studies to demonstrate:

1, In lieu of staff, due to bushfires and COVID driving staff shortages, many businesses looked to technology to compensate and keep their premises open to as close to capacity as possible, moving to table self-ordering systems (QR/token on the table) which automates the ordering, payment and sending of the order to the Kitchen. However, without internet connectivity, these systems can't work and people can't place orders. Ironically, it isn't the carriers who suffer reputationally, but the businesses through poor reviews and negative social media. Larger business have gone to the expense of providing "guest" networks for customers to use but most small business can't afford them. Further, if incorrectly configured, guest networks are highly vulnerable to compromise of systems and information on the primary business network. Carriers do not use cyber security robust consumer premise equipment, even for business customers.

2, Many businesses moved to contactless payment systems (COVID precaution) in which many banks rolled out new payment devices that relied solely on the carrier's mobile networks for processing payments or assumed that these businesses would also have wi-fi of their own – not a safe bet in a country town. At 5,000 people, these payment systems are slow – at 20,000 people, they just don't work and payments can't be taken. The NBN isn't an automatic answer either, with many of the retail buildings leased or sufficiently aged whereby an NBN lead in is not in place and will be prohibitively expensive to install – why do rural and regional businesses have to carry this expense when metro businesses have not?

3, Several Adventure Tourism operators are unable to access real-time weather information during Adventure tours. Even when they can get coverage, performance during peak tourism seasons mean that information pages will not load, leading to additional and unnecessary risk or curtailing of operations. Further, these operators have much more limited ability to receive alerts or other emergency messages during a natural disaster.

4, Telstra require that the equipment for 3G spectrum is redesignated to be used for 5G, many IOT devices (EFTPOS, Health Monitoring) is still heavily dependent on 3G services and the ability for consumers in rural and regional areas to replace that equipment is often harder than metropolitan users, due to lower average wages.

5, Regional businesses are missing out on efficiencies and benefits of cloud computing and the digital economy that metropolitan users take for granted. This leads to inequity in business, additional costs (country tax) on business who, typically, are operating at lower income levels per customer.

Looking at Telstra's coverage map, there is full coverage in the town – with no context given to spectrum or backhaul capacity issues that may or may not exist. This binary indicator, often without the context of shoulder or grey area coverage is a real concern because competitively, there are no penalties for overstating the coverage map. Full bars = Coverage map tick. One Bar = Coverage map tick.

The issue is so bad here that our community are considering deploying our own town wi-fi: <https://www.alpineobserver.com.au/featured-stories-news/the-project-that-could-ease-brights-wifi-woes>

I would ask the inquiry to consider the following recommendations:

1. Define categories of signal strength (in dB on a standardised device) to provide the public easy to understand coverage maps which considers directed transmitters and spectrum.
2. Define minimum levels of spectrum and backhaul capacity for areas based on the average subscriber numbers for a given area – not just the census population. This information is already known by carriers (connection stats) as well as by regional councils based on visitor numbers.
3. Define performance metrics that the public can easily understand the expect throughput of devices, during a fixed period – similar (but more accurately) to the minimum speed and throughput of a mobile service during a defined period (weekends)
4. Define minimal performance levels from towers funded by Government programs with consideration of a 5 year ROI for the Government spend.

Government Funding (Blackspot Program)

Blackspot funding has significantly improved the mobile coverage within rural and regional Australia. I acknowledge that the inquiry has already captured the question of multi-carrier mobile tower building and use and these are an area outside of my sphere. Except to say, that from a country community's perspective, it seems a thoroughly logical idea to improve coverage and competition.

However, the current funding of blackspots has brought up some unusual side-effects, for example:

- 1, Carriers are incentivised to focus on black spots and not improve poor performing areas of coverage already in place
- 2, Carriers are incentivised to ensure other carriers cannot use the towers being built, which significantly reduces competition in regional areas and country towns and effectively eliminates it in rural areas.
- 3, Some black spot towers may have been installed with questionable cost benefit analysis. One tower near here, Buckland Valley, was explained to me as providing much improved coverage to the township of Porepunkah. However, in the actual build location, coverage improvements into Porepunkah are geographically impossible and I cannot confirm if Porepunkah no longer qualifies for future blackspot funding, despite the coverage issues existing pre-Buckland tower, remaining.

I would ask the inquiry to consider the following recommendations:

5. The Blackspot program be reconsidered with 'grey' areas in mind
6. The Blackspot program have reportable metrics that consider:
 - a. The coverage that was promised in the tender and outcomes have been achieved.
 - b. The coverage achieved once the tower has been commissioned
 - c. The performance of that tower with regard to spectrum and backhaul capacity
7. And obviously, carriers being forced to provide the opportunity for competitors, at a reasonable price, to access towers funded by government, driving the market to self-invest in mobile telecommunications infrastructure to maintain a monopoly on the tower.

Resilience

The 2019 bushfires have deeply demonstrated a significant weakness in the planning and execution of bushfire incident management within Australia. Despite Government departments (both state and commonwealth) utilising mobile carrier networks for emergency information advice and evacuation orders, mobile carrier networks have not been categorised as critical infrastructure, with life-threatening national security implications.

For context, there has long been a push in Victoria to for the public to look to the Emergency Management Victoria (EMV) phone app for emergency updates and announcements, as the single source of truth.

During the 2019 bushfires, Bright was especially vulnerable as the bushfires occurred during our busiest tourism season, leading to the immediate evacuation of tourists in the days leading up to a full evacuation of residents. It was bloody scary. What occurred was that critical information being released to the public via the EMV app or via SMS were not getting to residents and visitors in a timely manner, if at all. Not receiving information is one thing, and emergency services did have to go door to door in some cases but receiving information late could be even more deadly as it will lead the public into making life and death decisions on the basis of official information that is potentially out of date.

I have highlighted my concern that there is relative market failure of mobile telecommunications in rural and regional Australia but nothing demonstrates this more than applying large corporate decision-making processes that might work fine in metropolitan areas, just doesn't work in rural and regional areas, and will absolutely kill people – soon! Case in point, losing a tower in metropolitan Melbourne probably has low impact as there is density for other towers to take over. If we lose the tower on Apex Hill, 25,000 lives are at risk – which I hope demonstrates that the impact of a single tower loss between metropolitan and regional/rural is categorically incomparable, yet the same risk management standard (and market conditions) are applied.

The design and resilience of mobile towers is a key mitigating control in managing the resilience of mobile telecommunications during a disaster and highly important when managing an evacuation through designated evacuation routes. Whether bushfire, flood, weather related disaster or just a power outage, there are no standards for the resilience of mobile telecommunications infrastructure. It's not just the resilience of the physical tower against threats that need to be considered but also resilience to component failure as well as the overall design of backhaul into the larger network, including the use of fibre rings to mitigate the risk of fibre cuts.

A case or two in point:

1, the Optus service into the Keiwa Valley uses towers that are connected by point-to-point wireless connections to provide backhaul to Wangaratta on the actual tower. Should any tower along this 'daisy chain' fail, all towers further up the valley will be cut off. In conducting a back of the napkin risk assessment of this risk during a bushfire, as there are up to 8 towers in the chain up to the town of Mouny Beauty located within various forests and plantations, the likelihood that Mount Beauty will be left without emergency message coverage via this major carrier is just beyond 'absolute'.

2, Power failure of a tower plays a massive role in emergency services management of an incident. Electricity is usually the first thing to be shut down in a bushfire, or even during a catastrophic bushfire period, as power distributors fear legal culpability for fires spreading with downed power lines. Right now, emergency managers have no insight into which towers

are critical to their community or emergency zone and what power resiliency each tower is expected to have. This information plays a critical part in any emergency decision and declaration management. An incorrect assumption here and lives are very much at risk.

3, In the two most recent bushfires, the townships of Mount Hotham, Dinner Plain, and Harrierville were almost lost and evacuation orders and other information was issued regularly. However, there are several known black spots along designated evacuation routes between Dinner Plain and Wangaratta that do not have any mobile coverage at all.

I highlight the following areas of weakness and ask the inquiry to consider these recommendations:

8. That mobile telecommunications infrastructure be legislated within bushfire, or other natural disaster zones as being critical infrastructure with legal resiliency standards applied.
9. Each tower assessed and rating declared for its criticality, on a published scale, as measured by the impact of losing that tower to the local community, relevance to a designated evacuation route, impact on emergency services planning and other stakeholders
10. Legal resiliency requirements must consider the following, based on criticality:
 - a. Defined natural disaster zones
 - b. Proximity to designated evacuation routes.
 - c. Resistance to fire and/or water within these zones (like building fire protection)
 - d. Resistance to power failure for a minimum rating per criticality classification
11. Minimum design rules, with consideration to resilience with
 - a. Resistance to physical threats, including power failure
 - b. Component failure
 - c. Backhaul resilience to physical threats through the entire path to the network core
 - d. Backhaul resilience to power failures through the entire path to the network core

Australian Consumer Law

The overall state of mobile infrastructure has significant influence on Australian consumer rights as they relate to rural and regional mobile customers. In Bright, mobile phone and data services are not available for the better part of the 3 months of the year, with mobile services being effectively unavailable for all of January and much of the Victorian and NSW school holiday periods. Coincidentally, January is the main bushfire risk period for the region.

In the real world:

- 1, One professional services business closes their Bright office during January and moves to Myrtleford. While mobile services work with NBN and Wi-Fi Calling, any attempts to make or receive calls out of the range of their Wi-Fi network, fail.
- 2, Business that have obligations under health care and food safe laws find it very difficult to monitor temperature and health sensors for that entire month or during extended periods where the mobile networks are overwhelmed!

So, this leads to my question about consumer law. Imagine I owned an ice cream shop and you subscribed to an ice cream a day, let's say 2 scoops and a cone. But every weekend I told you that I was a little busy so how about you have 1 scoop and a cone, should you have a case where I've broken contract law – I mean it's still an ice cream right? Now imagine, it's January and hot as hell – perfect ice cream weather but for an entire month I intentionally say "sorry, too busy to provide an ice cream at all – come see me in February or feel free to try our competitors, the ACCC would be (rightfully) on to me in a flash for breach of contract or misleading or deceptive conduct. This is Telstra's mobile service – they have contracted me knowing that they cannot provide a service. I pay a monthly subscription for 40GB of downloads a month (up to) yet I (and an entire town + 20,000+ visitors) are expected to accept that Telstra cannot provide that service for a month or when it is peak tourist seasons.

Now imagine, I'm the only ice cream shop in town or you've contracted with me for 24 months, does that give me the power to apply unfair terms, let's say allow me to push undue influence on the terms of the agreement or participate in unconscionable conduct. As I have documented, the current policy model for mobile infrastructure in Australia continues to contribute to a complete market failure for rural and regional customers.

I would ask the inquiry to consider the following recommendations:

12. Consider the inputs of the other contributors in the context of how these submissions affect, positively or negatively, consumer rights of rural and regional customers as they relate to retail telecommunications providers.
13. Ensure all recommendations clearly identify the ramifications for rural and regional mobile telecommunications customers.
14. Define exactly what lawful delivery of a mobile service is and the minimal service expectations.
15. Begin an inquiry into the terms and conditions of mobile telecommunication agreements to ensure that the agreements do not unfairly advantage the carrier.
16. The ACCC consider if penalties or refunds should be offered by mobile carriers when they are (knowingly or not knowingly) unable to provide a mobile service.

You'll be pleased to know that Telstra have recently informed me that due to inflation, they have moved me to a new account plan with an increase of 6% in my monthly service fee – without any corresponding changes to data limits or the fact that for 3 months a year, Telstra are unable to successfully provide their contracted service.

Town Wi-Fi (Going it alone)

The Bright and Districts Chamber of Commerce are currently piloting a town Wi-Fi service that can be used by locals and tourists alike that will hopefully take the pressure off the mobile towers. More information is available [here](#)¹.

Since this story was published (a week), Telstra have claimed that they successfully upgraded capacity in the Bright Apex Hill tower/transmitter, and all is well with the world. It takes me a week to get Wi-Fi equipment sent to me to do network installations and Telstra expect us to believe that they have been able to upgrade the tower in a week and to have addressed this issue².

This leads to two possible conclusions:

- 1, That if this claim is true and Telstra have been able to make a software change that has improved performance – but I need to ask; why has it taken this long to make the change?
- 2, That this is not true and Telstra have made a statement in error, potentially to prevent customers leaving their network and going to the competition. If indeed this was the aim and intentional, is this misleading and/or deceptive conduct?

I would ask the inquiry to consider the following recommendations:

17. The ACCC investigate this, and other public statements by Telstra and other carriers, trying to quell public concerns by claiming upgrades having been made, are indeed true and not misleading and, therefore, anti-competitive.

In conclusion, I am a great believer in the military mantra: Success is a singular event, it's the little screw ups that will kill you. The current state of mobile telecommunications can be summed up as a failed market, with small defects within regional tower infrastructure driving service vulnerabilities throughout the entire service chain, with particular dominance of one or two key monopoly providers. It is vital the ACCC understands the influence of mobile infrastructure policy on the end-to-end services experienced by rural and regional consumers and businesses. The decisions made during this inquiry will have significant life and death consequences for our communities.

Again, thank you for the opportunity to contribute. I apologise in advance if anything has been provided in an overly emotional way and hope this doesn't detract from a fundamental inequality in our digital society. However, if you ever want to see me really upset, ask me about NBN policy.

Bruce Hore
[REDACTED]

¹ <https://www.alpineobserver.com.au/featured-stories-news/the-project-that-could-ease-brights-wifi-woes>

² <https://www.alpineobserver.com.au/news-news/capacity-upgrade>